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ABSTRACT

Online distance education is being introduced at the Faculty of Economics and Business, University of Maribor (Slovenia) for an e-business course within which an experience about students' acceptability of online distance education was conducted. In spring 2001, an experiment with online materials (in place of regular lectures) for an e-business course was conducted in which two groups of 20 students participated. This paper discusses students' characteristics and their information technology attitude; opinions about use of online materials; quality of online materials; evaluation of gained knowledge; and readiness for distance education. (Contains 17 references.) (AEF)

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STUDENTS' READINESS FOR ON-LINE DISTANCE EDUCATION IN SLOVENIA

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Abstract

Presence and expansion of on-line distance education (DE) are one of the characteristics of the information society by which we can estimate the level of its development. We witnessed many changes in Slovenia in the last decade, so we were interested in acceptability (and readiness) of Slovene students for on-line DE, especially because the Internet has so successfully penetrated into the Slovene society.

Keywords: on-line distance education, high education, Slovenia

ED 479 617

Introduction

Lately, knowledge has been given increasing importance, yet more and more knowledge gained at schools quickly becomes out-of-date and therefore it must be updated. The act of "updating" the existing knowledge is mostly done by the active part of the population, which can hardly afford to leave their work and begin to study. Nevertheless, in the last decade, various forms of education have been developed, which help to solve this problem. One of them is on-line distance education (DE).

On-line DE belongs to the phenomena of the information society, which – with regard to its wide use – can indicate the development of a country (indicator of development by RIS (1999)). It is therefore likely that Slovenia will follow developed countries and that the introduction and usage of on-line DE is inevitable.

In the higher education in Slovenia only the Faculty of Economics, University of Ljubljana (http://www.ef.uni-lj.si) and Doba Maribor (http://www.doba.si) performed DE. DE at the Faculty of Economics is offered in traditional way with one exception, the on-line materials for a course on European Economic Statistics (http://www-lt.fe.uni-lj.si). The second institution, Doba, offers on-line DE supported by WebCT educational environment. On-line DE at Doba started in September 2000 with 35 enrolled students and in this academic year (2001/2002) they have additional 204 students.

On-line DE is being introduced at Faculty of Economics and Business (FEB), University of Maribor, too for an e-business course (http://www.uni-mb.si/~epfpodin) within which an experiment about students acceptability of on-line DE was conducted.

Readiness for On-line DE (an Experiment)

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Participants of the Experiment

In spring 2001, an experiment with on-line materials instead of regular lectures for e-business course was conducted in which two groups of 20 students participated (experimental and control group). The control

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group attended classical lectures, the other one studied with on-line materials (http://epf-se.uni-mb.si/e-gradivo/eb-index.htm).

After the experiment students used a questionnaire, composed of two sets of questions:

- With the first set of questions the participants of the experiment were asked about their IT attitude, usage of forum, on-line materials and obtained knowledge and
- With the second set of questions we estimated and evaluated their acceptability for on-line DE.

Students characteristics and their IT attitude

In Table 1, statistically significant correlation between student characteristics and their IT attitude are shown.

	Characteristics and attitude of students	**2.**	**3.**	**4.**	**5.**	**6.**	**8.**
1.	Gender						
2.	Motivation for studies						
3.	Average grade						
4.	Attitude toward IT						
5.	PC usage (subjective)			0.47**			
6.	PC usage (objective)						
7.	IT usage			0.52**	0.59**		
8.	Attitude toward lectures supported by IT	0.36*	0.45**	0.44**			
9.	Attitude toward lectures supported by AV			0.40*		0.39*	-0.45**

**p < .01 (2-tailed), *p <.05 (2-tailed)

Table 1: Significant correlation of student characteristics and their IT attitude

Among participants exists a positive correlation between the assessment of PC usage and their attitude towards IT (0.47), which shows that students with a more agreeable attitude towards IT also think highly about their ability regarding computer usage. Such users use IT actively (correlation with the variable attitude towards IT: 0.52 and correlation with the variable PC usage estimation: 0.59).

Interestingly, highly motivated students showed a keen interest for the use of IT (0.36). The same holds true for students who think highly about studies going on at EPF (0.45), as well as students who have a keener attitude towards IT (0.44).

In Table 2, regression analysis regarding the dependence of IT attraction to lectures on the independent variables from Table 1 is shown.

Included variable	B	t	Sig.
Average grade	0.162	2.463	0.020
IT attitude	0.119	2.420	0.022
F=7.415 Sig. 0.002; adj R^2=0.286			
Excluded variables: study motivation			

Table 2: Dependence of IT attraction to lectures on the independent variables

The analysis shows that IT mainly attracts students with higher average grades, as well as students who are in favour of IT, which is somehow understandable. We can easily assert that computer literacy leads to a more positive relationship towards IT supported teaching, and consequently, towards a better class participation.

Videotaped lectures were thought highly of by students who were a part of the experimental group (-0.44), who thought highly of IT (0.40) and who placed themselves in the group of serious PC users (0.39).

On-line materials

All participants of the experimental group found their participation in the experiment highly interesting, they wished they could use e-materials as a supplement for their lectures, and they expressed a belief that such materials should have been available for other subjects.

Opinion about usage of on-line materials	Control group	Experimental group
Attraction of on-line materials	81.2%	100%
On-line materials can complement lectures	87.5%	100%
On-line materials need to be used in other subjects	75.0%	100%

Table 3: Usage of on-line materials

As we can see in Table 1, students preferred the usage of on-line materials to traditional teaching.

The biggest obstacle for the use of e-materials through the Internet is high cost. If the costs of e-materials for the Internet usage were lower, 46.7% of students in the control group and 58.8% of students of the experimental group would use them.

Quality of on-line materials

Quality of materials for DE is essential. Quality elements of software evaluated by ISO 9126 standard, which determines 6 characteristics of software, are: functionality, reliability, usability, efficiency, maintainability and portability (ESSI-SCOPE 2001).

Standard does not prescribe the meaning of individual characteristics or the metrics for their assessment, because the meaning and assessment are connected with the purpose of software (ibid.). Therefore, the assessment of quality was left to software users, and was carried out by means of a two-level model. On the first level, students assessed individual components of the used e-materials or activities, which were connected with the usage of e-materials in the experiment. Because not all characteristics are equally important and because the importance of individual characteristics is by nature subjective, we - in order to

assess the importance of a characteristics, typical for e-materials in general - decided to include students, who sorted the ten characteristics from 1 to 10, placing on the first place what they considered the most important characteristics and on the tenth place what they believed to be of least importance. On the basis of this information we calculated relative weights (ponder) for each characteristic in the assessment model (Table 4).

Components of evaluation model	M	Ponder	evaluation
1. Ease of use	7.67	0.15	1.15
2. Graphical design	8.24	0.11	0.91
3. Text understanding	8.21	0.15	1.23
4. Interactivity	8.16	0.09	0.73
5. Readability of texts	8.19	0.14	1.15
6. Links to similar areas	7.81	0.08	0.62
7. Links to web pages of the course	7.81	0.07	0.55
8. Entertaining content	7.28	0.06	0.44
9. Clear learning objectives	8.18	0.10	0.82
10. Cited literature	6.52	0.05	0.33
Total		**1.00**	**7.93**

Table 4: Evaluation model of quality of on-line materials

E-materials were assessed as very good, as they were assessed with 7.93 on the scale 1 to 10.

Evaluation of gained knowledge

Gained knowledge was assessed by means of a knowledge test that comprised of 32 questions, which were used to check student's ability of recognising the materials dealt with.

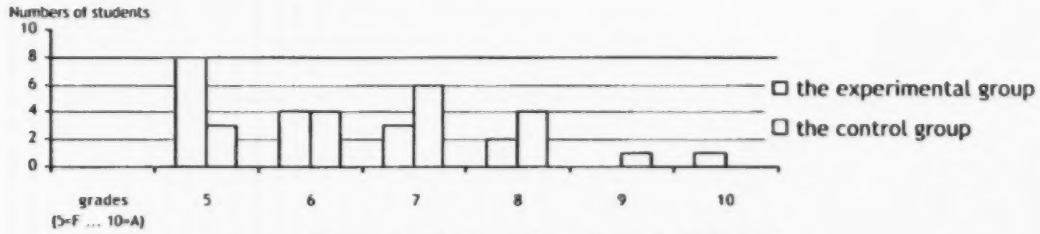


Figure 1: Comparison of results of tests

It can be seen that the members of the control group proved to be much more successful than the members of the experimental group. More than one third of the students of the latter group did not manage to remember enough in one hour of learning to gain a positive mark. Taking into account the fact that the contents of lectures was the same in e-materials and in ordinary lectures, poor results can be explained only by believing that the students of the experimental group did not pay enough attention to learning objectives set at the beginning of the materials. Quite obviously, an ordinary lecture, assessed pretty highly by the participants (M=8.7; on a scale 1=poor to 10=excellent), is still very important for students. The classical lecture was supplemented by practical cases and learning objectives were explicitly given, which probably contributed towards better recall of basic terms.

When we merged the questionnaire of the selected group with the tests, which assessed knowledge we wanted to find out if the result of the test is statistically correlated with any other variable. The results of regression analysis are shown in Table 5.

Included variables	B	t	Sig.
Usage of Internet	6.982	2.614	0.014
Gender	-3.092	-2.424	0.022
F=6.404 Sig. 0.005; adj R^2=0.252			
Excluded variables: motivation, attitude toward IT			

Table 5: Dependence of the students' success in tests

The regression analysis shows that better results were reached by male students and students who used the Internet and e-mail. This at the same time proves the hypothesis that computer-literate students are likely to be more successful in on-line distance education.

We have also proved the hypothesis that the experiment will be interesting for the chosen group, as all members of the experimental group expressed keen interest for the experiment, as well as 81.2% of student in the controlled group.

Readiness for DE

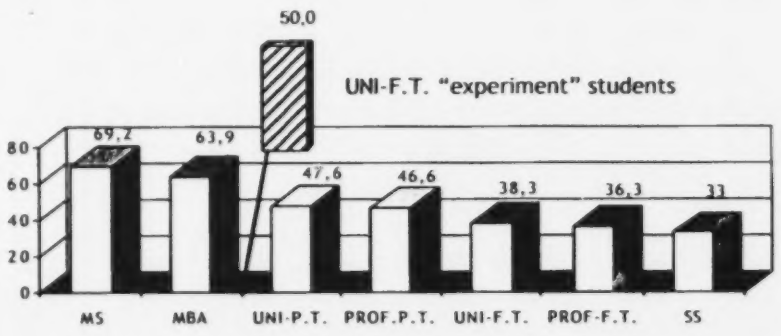
The readiness was evaluated on the basis of the model of acceptability of on-line DE, which includes the following items – participants' characteristics (and their relative weights):

- Motivation (20%),
- Students' connection necessity (8%),
- Possibilities for IT using and relationship to IT (32%),
- Abilities for IT using (30%),
- Usage of e-services (10%).

The students estimated their study motivation and some other characteristics on a five-degree scale. The average value, corrected with standard deviation, was included in the model. The same method was used for assessing their relationship and experience with IT. The estimations of DE readiness, shown in Figure

2, was calculated through corrected average values for some variables and percents of variables and their relative weights for other variables.

We also tried to assess FEB students' readiness for DE in general. Thus 652 students from various FEB programmes (different undergraduate and postgraduate, full time and part time programmes) were inquired and gathered data was analyzed with the model of Internet based DE acceptability. The results are shown in Figure 2, which shows that students in both postgraduate programmes point at a higher DE readiness, which is a consequence of higher motivation, longer learning experience and higher computer literacy.



Legend: MS – postgraduate master of science study; MBA – postgraduate MBA study; UNI – university (4 year) program; PROF – professional (3 year) program, P.T. – part-time study, F.T. – full-time study; SS – secondary school

Figure 2: FEB student's readiness for DE (11)

Based on the gathered data from the students who participated in the experiment and the model of readiness for DE, their DE readiness was estimated, too. The estimated value 50 is higher compared to the readiness estimated for FEB full-time university program students (38.3) (11). Higher acceptability of DE can be explained with their higher computer literacy and with better IT experience in education process obtained by using various on-line materials from the e-business course's web site (http://www.uni-mb.si/~epfpodin).

The estimation of readiness proves that higher computer literacy raise the readiness for DE, supported by IT. Improved computer literacy leads to better chances for the introduction of IT, be it for business purposes or the advancement of e-services.

Conclusion

Major findings of the experiment and its research are:

- The first step toward DE at the Faculty of Economics and Business (FEB) in Maribor has been done (for an e-business course).
- The students prefer on-line materials and DE is generally acceptable especially among postgraduate students so the possibilities for on-line DE at FEB exist and FEB needs to take the necessary steps to exploit this opportunity.

- Keen interest of the participants in the experiment group for the introduction of IT in education is connected with the fact that students can only express enthusiasm about something they have experienced and used. DE supported by IT will begin to flourish only if (and as soon as) IT has been included in teaching properly.

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